

## **REMARKS**

The Office Action dated July 10, 2007 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto.

As will be discussed below, it is also requested that all of claims 1-30 be found allowable as reciting patentable subject matter.

Claims 1-30 are pending and under consideration.

## **REJECTION UNDER 35 U.S.C. § 102:**

*In the Office Action, claims 1, 2, 7-17, 21-23, and 25-30 were rejected under 35 USC §102(e) as being anticipated by Laroia (US Publication No. 2004/0228320). The Office Action took the position that Laroia describes all the recitations of independent claims 1, 16, 23, 28, 29, and 30 and related dependent claims. This rejection is traversed and reconsideration is requested.*

Independent claim 1, upon which claims 2-15 are dependent, recites a method, including providing a set of predetermined sequences of redundancy parameters, selecting at least one of said set of predetermined sequences, and transmitting information indicating the selected at least one sequence to a terminal device to provide said redundancy parameters for an automatic repeat request processing at said terminal device.

Independent claim 16 recites a terminal device, including receiving means for receiving information indicating a selected sequence of redundancy parameters, and parameter generating means, operably connected to said receiving means, for generating said selected sequence of redundancy parameters for an automatic repeat request function in response to receipt of said information to apply a redundancy strategy to said automatic repeat request function.

Independent claim 23 recites a network device, including selecting means for selecting a sequence of redundancy parameters, generating means, operably connected to said selecting means, for generating information indicating said selected sequence, and transmitting means, operably connected to said selecting means, for transmitting said information to a terminal device to provide a communication link to said terminal device.

Independent claim 28 recites a system, including a terminal device configured to apply a redundancy strategy to an automatic repeat request function, said terminal device including a receiver configured to receive information indicating a selected sequence of redundancy parameters, and a parameter generating unit, operably connected to said receiver, configured to generate said selected sequence of redundancy parameters for said automatic repeat request function in response to the receipt of said information, and a network device, operably connected to a terminal device, configured to provide a communication link to said terminal device to provide redundancy parameters for an automatic repeat request processing at said terminal device. The network device includes a selecting unit configured to select a sequence of redundancy parameters, a generator,

operably connected to said selecting unit, configured to generate information indicating said selected sequence, and a transmitter, operably connected to said selecting unit, configured to transmit said information to said terminal device.

Independent claim 29, upon which claims 17-22 are dependent, recites a terminal device, including a receiver configured to receive information indicating a selected sequence of redundancy parameters, and a parameter generating unit, operably connected to said receiver, configured to generate said selected sequence of redundancy parameters for an automatic repeat request function in response to the receipt of said information to apply a redundancy strategy to said automatic repeat request function.

Independent claim 30, upon which claims 24-27 are dependent, recites a network device, including a selecting unit configured to select a sequence of redundancy parameters, a generator, operably connected to said selecting unit, configured to generate information indicating said selected sequence, and a transmitter, operably connected to said selecting unit, configured to transmit said information to a terminal device to provide a communication link to said terminal device.

As will be discussed below, *Laroia* fails to disclose or suggest the elements of any of the presently pending claims.

According to the presently claimed application, a predetermined sequence of redundancy parameters is provided, from which one sequence is selected and information indicating the selected sequence is transmitted to a terminal device. Therefore, a network

operator is able to select redundancy version strategies to be used by the terminal device, while little signaling is required between the network and the terminal device.

In contrast thereto, *Laroia* generally describes a repeat request method and apparatus in which different NAK signals are used to indicate different relative levels of success in regard to an unsuccessful attempt to decode a received signal. An ACK signal is used in the case of successful decoding. FIG. 5 illustrates an example of using incremental redundant codes, e.g., incremental redundant LDPC codes, in accordance with the invention. As shown in FIG. 5 of *Laroia*, in a first traffic segment 520, the information bits 510 and the first part of the parity check bits 514 are transmitted. See paragraphs [0078]-[0080]. The combination of the coded information bits 510 and the first part 514 of the parity check bits form a first set of encoded information which is transmitted. The remaining parity check bits, the second through fourth parity check bits, form a set of redundant information, which is stored and used in the event of a NAK.

In essence, *Laroia* provides that if the receiver 522 with its decoder 524 cannot decode the information bits 510 and sends a NAK 526, the transmitter 502 sends the second part of the parity check bits 516 in a second traffic segment 528. The receiver 522 uses both the received segments 520, 528 in the decoding process in an attempt to decode the information bits 510. If the receiver 522 still cannot decode the information bits 510 as evidenced by the receiving device 522 sending another NAK 530 in an acknowledgement segment corresponding to the second traffic segment 528. Then, the transmitter 502 transmits the third part of the parity check bits 518 in a third traffic

segment 532. The receiver 522 should use some or all of the received segments, e.g., segments 520, 528, 532 to decode the information bits 510. If the receiver 522 decodes the information bits 510 successfully at some time, then the transmitter may discard the unused parity check bits.

However, *Laroia* fails to teach or suggest, at least, “selecting at least one of said set of predetermined sequences,” as recited in independent claim 1. As further provided in independent claim 1, based on the selected at least one sequence providing said redundancy parameters transmitted to a terminal device, the terminal device performs an automatic repeat request processing. There is no selection of at least one of the set of predetermined sequences in *Laroia*. Instead, *Laroia* provides a successive transmission of redundancy parameters until reaching a successful decoding. *Laroia* appears to provide a block of redundant bits 512 including a first part 514, a second part 516, a third part 518, and a fourth part 519. The first part of the parity check bits 514 is transmitted in combination with the information bits 510. Then, each remaining part of the parity check bits is successively transmitted in the event of a NAK whenever the receiver 522 is unable to decode the information bits 510 associated with the transmitted parity check bits.

Therefore, the essence of the description of *Laroia* is to achieve an efficient automatic repeat request in a multiple access wireless communications system by providing a large block of parity check bits 512 associated with the big parity check matrix used by the transmitter (See Laroia: page 9, lines 8-10).

Thus, the configuration proposed by *Laroia* is different from the recitations of the claimed invention wherein the transmission of a selected predetermined sequence amongst a set of predetermined sequences of redundancy parameters differs from the successive transmission of redundancy parameters until reaching a successful decoding.

Therefore, the automatic repeat request method and apparatus disclosed in *Laroia* do not anticipate the selection and the transmission of the selected at least one sequence to provide redundancy parameters claimed in the present set of claims.

Because independent claims 16, 23, and 28-30 include similar claim features as those recited in independent claim 1, although of different scope, and because the Office Action refers to similar portions of the cited references to reject independent claims 16, 23, and 28-30, the arguments presented above supporting the patentability of independent claim 1 are incorporated herein to support the patentability of independent claims 16, 23, and 28-30.

It is respectfully requested that independent claims 1, 16, 23, and 28-30 and related dependent claims be allowed.

**REJECTION UNDER 35 U.S.C. § 103:**

*Claims 3-6, 18-20, and 24 were rejected under 35 USC §103(a) as being obvious in view of Laroia and AAPA (Applicant Admitted Prior Art (paragraph [0003]). The Office Action took the position that Laroia and AAPA disclose all the aspects of*

*dependent claims 3-6, 18-20, and 24. The rejection is traversed and reconsideration is requested.*

As will be discussed below, *Laroia* and *AAPA* fail to disclose or suggest the elements of any of the presently pending claims.

Dependent claims 3-6 depend from independent claim 1, dependent claims 18-20 depend from independent claim 29, and dependent claims 24 depend from independent claim 30. Because the combination of *Laroia* and *AAPA* must teach, individually or combined, all the recitations of the base claim and any intervening claims of dependent claims 3-6, 18-20, and 24, the arguments presented above supporting the patentability of independent claims 1, 29, and 30 over *Laroia* are incorporated herein.

*AAPA* generally describes uplink packet data of Wideband Code Division Multiple Access (WCDMA) systems covering radio transmission of data from a mobile unit or mobile terminal, called User Equipment (UE) in third generation terminology, to a fixed station, called Node B in third generation terminology. Here, the case of erroneous reception of data packets is handled by Radio Link Control (RLC) signaling. See paragraph [0003]. However, *AAPA* further provides in paragraph [0003] that such configuration is disadvantageous in that a retransmission will require relatively large buffers and will introduce significant delays. One of the technologies under investigation in connection with enhanced uplink data is fast H-ARQ, where the packet retransmissions are handled at either physical layer or Media Access Control (MAC) layer and, thus, in principle at the Node B instead of the Radio Network Controller (RNC).

However, *AAPA* does not cure the deficiencies of *Laroia*. Similarly to *Laroia*, *AAPA* is silent as to teaching or suggesting, at least, “selecting at least one of said set of predetermined sequences, and transmitting information indicating the selected at least one sequence to a terminal device,” as recited in independent claim 1, at least, “a receiver configured to receive information indicating a selected sequence of redundancy parameters, and a parameter generating unit, operably connected to said receiver, configured to generate said selected sequence of redundancy parameters for an automatic repeat request function in response to the receipt of said information,” as recited in independent claim 29, and at least, “a selecting unit configured to select a sequence of redundancy parameters, a generator, operably connected to said selecting unit, configured to generate information indicating said selected sequence, and a transmitter, operably connected to said selecting unit, configured to transmit said information to a terminal device,” as recited in independent claim 30.

Accordingly, a combination of *Laroia* and *AAPA* would not teach or suggest all the recitations of independent claims 1, 29, and 30 and related dependent claims 3-6, 18-20, and 24.

In view of the foregoing, it is respectfully requested that claims 3-6, 18-20, and 24 be allowed.

**CONCLUSION:**

In view of the above, Applicants respectfully submit that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicants further submit that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicants therefore respectfully request that each of claims 1-30 be found allowable and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicants respectfully petition for an appropriate extension of time.

Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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